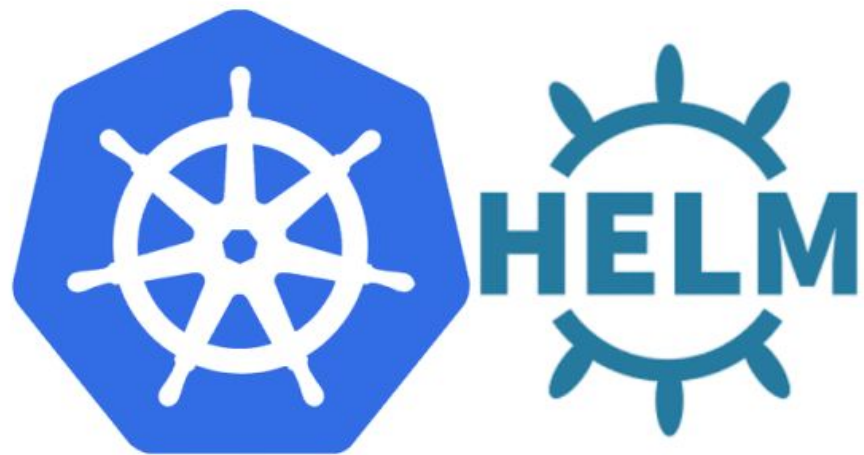# Kubernetes For DevOps

Lev Epshtein

Kubernetes Helm

Helm is a tool for managing Kubernetes packages called *charts*. Helm can do the following:

- Create new charts from scratch

- Package charts into chart archive (tgz) files

- Interact with chart repositories where charts are stored

- Install and uninstall charts into an existing Kubernetes cluster

- Manage the release cycle of charts that have been installed with Helm

Three big concepts

A *Chart* is a Helm package. It contains all of the resource definitions necessary to run an application, tool, or service inside of a Kubernetes cluster. Think of it like the Kubernetes equivalent of a Homebrew formula, an Apt dpkg, or a Yum RPM file.

A *Repository* is the place where charts can be collected and shared. It's like Perl's CPAN archive or the Fedora Package Database, but for Kubernetes packages.

A *Release* is an instance of a chart running in a Kubernetes cluster. One chart can often be installed many times into the same cluster. And each time it is installed, a new *release* is created. Consider a MySQL chart. If you want two databases running in your cluster, you can install that chart twice. Each one will have its own *release*, which will in turn have its own *release name*.

RBAC API Objects

One basic Kubernetes feature is that all its resources are modeled API objects, which allow CRUD (Create, Read, Update, Delete) operations.

Examples of resources are:

Examples of possible operations over these resources are:

| Pods |
| PersistentVolumes |
| ConfigMaps |
| Deployments |
| Nodes |
| Secrets |
| Namespaces |

create
get
delete
list
update
edit
watch
exec

At a higher level, resources are associated with [API Groups](#) (for example, Pods belong to the *core* API group whereas Deployments belong to the *apps* API group). For more information about all available resources, operations, and API groups, check the [Official Kubernetes API Reference](#).

To manage RBAC in Kubernetes, apart from resources and operations, we need the following elements:

- Rules
- Roles and ClusterRoles
- Subjects
- RoleBindigs

Follow tutorial:

https://docs.bitnami.com/kubernetes/how-to/configure-rbac-in-your-kubernetes-cluster/